

2/2 009

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104239

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ALKALI HYDROXIDE SOLNS. OSO
SUB4 WAS REDUCED TO THE RED OS(VI) ION (OSO SUB2 (OH) SUB4 PRIME
NEGATIVE2, VIA THE INTERMEDIATE (OSO SUB4 (OH) SUB2) PRIME NEGATIVE2.

UNCLASSIFIED

Acc. Nr:

AP0053379

Abstracting Service:

CHEMICAL ABST *B-4/70*

Ref. Code:

4R0072

82386d Use of potentiometric method for titrating microconcentrations of bases for determining the resistance to water

leaching of glasses. Bardin, V. V.; Kolmakova, L. A. (Leningrad.

Tekhnol. Inst. im. Lensovet, Leningrad, USSR). *Steklo Keram.*

1970, 27(1), 42-3 (Russ). The following procedure is proposed for the detn. of water-sol. bases in glass. Wash the powd. glass (particles 0.5-0.8 mm) with EtOH to remove the finest powder, dry 5-10 min. at 100-110°, take 1-2.5 g sample into an Erlenmayer flask, add 200 ml water and close with a plastic foil. Stir slightly every 20 min. while heating the flask 1 hr at 100°. Filter off the glass and dil. the soln. to 250 ml with water. Aliquots of 100 ml are taken for titrn. with HCl. Visual indicators do not give satisfactory results. A potentiometric titrn. with quinhydrone electrode is found more useful. A correction for the blank is necessary.

M. Bartusek

REEL/FRAME
19830402

7

USSR

UDC 547.785.1:541.132.515

TAMASEYCHUK, B. S., ~~BARDINA, A. A.~~, KHOMENKO, A. A., Mordovian State University imeni N. P. Ogarev, Saransk

"Study of Nitrogen-Containing Heterocyclic Free Radicals. XIV. Dissociation Rate of Diaryl- β -naphthylimidazolyl Radicals"

Riga, Khimiya Geterotsiklicheskih Soyedineniy, No 9, Sep 71, pp 1255-1257

Abstract: The authors effected the synthesis of dimers of 4(5)-phenyl-5(4)- β -naphthyl-2-arylimidazolyls and studied the effect of substituents in the 2-phenyl ring on the dissociation rate constant of the dimers. The synthesis of the dimers was accomplished by oxidation of β -naphthyldiarylimidazolyls with potassium ferricyanide in an aqueous-alcoholic solution of alkali. The dissociation rate constants of the dimers were studied by the method based on the reaction of the dimer with α, α -diphenyl- β -picrylhydrazine. The dissociation rate was determined from the rate of accumulation of α, α -diphenyl- β -picrylhydrazine in solution. As in the case of bistritylimidazolyl, the dissociation rate of the dimer fits first-order kinetics. The effect of substituents in the phenyl

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TANASEYCHUK, B. S., et al, Khimiya Geterotsiklicheskih Soyedineniy, No 9, Sep 71, pp 1255-1257

ring on the dissociation rate of dimers of β -naphthyl-diarylimidazolyls is described by the Hammett equation, but the substituent effect is less than in the case of dimers of biphenyldiarylimidazolyls and triphenylimidazolyls. This is probably due to the fact that β -naphthyl makes a greater contribution than phenyl or biphenyl to the transition-state stabilization energy.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ADSORPTION OF THIOUREA ON MOLTEN GALLIUM -U-
AUTHOR--(04)--BAGOTSKAYA, I.A., FATEYEV, S.A., GRIGORYEV, N.B., BARDINA,
N.G.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA, MAR. 1970, 6, (3), 369-372 **B**
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ADSORPTION, THIOUREA, GALLIUM, ELECTRODE POLARIZATION, SURFACE
ACTIVE AGENT, METAL PASSIVATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1988 STEP NO--UR/0364/70/006/003/0369/0372
CIRC ACCESSION NO--AP0125577
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION OF THIOUREA, $\text{CS}(\text{NH}_2)_2$, ON MOLTEN GA WAS STUDIED BY A METHOD BASED ON MEASURING THE DIFFERENTIAL CAPACITY AT A GA ELECTRODE AND PLOTTING POLARIZATION CURVES. BOTH IN AN ACID AND IN A NEUTRAL SOLUTION THE POTENTIAL CORRESPONDING TO THE EVOLUTION OF H_2 ON THE GA MOVED IN THE POSITIVE DIRECTION BY 0.3 V IN THE PRESENCE OF THIOUREA, ALTHOUGH THE SLOPE OF THE POLARIZATION CURVES REMAINED UNCHANGED. THESE RESULTS ARE INTERPRETED IN TERMS OF THE ADSORPTION OF THE ORTION IN SUCH SOLUTIONS. THUS INCREASING THE PRESSURE OF O_2 OVER THE SOLUTION DISPLACED THE STATIONARY POTENTIAL IN THE POSITIVE DIRECTION AND REDUCED THE SELF DISSOLUTION CURRENT. FOR HIGH C.D. AND O_2 CONCENTRATIONS INTENSIVE PASSIVATION TOOK PLACE; UNDER CONDITIONS OF SELF DISSOLUTION THE PASSIVATION WAS PARTIAL. THE PRESENCE OF SURFACE ACTIVE SUBSTANCES ALSO PLAYED A MAJOR ROLE IN PASSIVATION PROCESSES.

Power, Turbine, Engine, Pump

USSR

UDC: 62-235.5

MALYUTIN, P. V., GUNYAYEV, G. M., VORONTSOV, I. A., RUMYANTSEV, A. F.,
BARDINA, N. P., STEPANENKO, N. D., KARIMBAYEV, T. D., KISELEV, Yu. A.,
GORSHKOV, L. A.

"A Turbine Blade"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki,
No 21, Jul 72, Author's Certificate No 344168, Division F, filed 31 Aug 70,
published 7 Jul 72, p 135

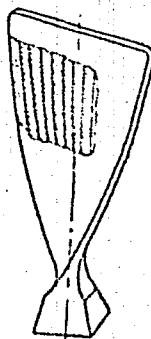
Translation: This Author's Certificate introduces a turbine blade for an
axial compressor made of a laminar composition material. As a distinguish-
ing feature of the patent, the rigidity and vibration strength are increased
by making the blade from alternating layers of glass and carbon fiber
fillers oriented relative to the longitudinal axis of the blade, 34-45%
of the fiberglass-filled layers being oriented at angles from 0 to $\pm 15^\circ$,
while 5-15% of the fiberglass-filled layers are oriented at angles from
 ± 75 to 90° , 20-30% of the carbon fiber-filled layers are oriented at angles
from 0 to $\pm 15^\circ$, and 20-30% of the carbon fiber-filled layers are oriented
at angles from ± 45 to $\pm 60^\circ$.

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USSR

MALYUTIN, P. V. et al., USSR Author's Certificate No 344168



2/2

Physiology

USSR

UDC 611.14:613.64

BARDINA, R. A., Chair of Normal Anatomy, Military Medical Academy imeni
S. M. Kirov

"Effects of a Single Exposure to a Series of Accelerations on the Structure of
the Vena Cava Wall"

Leningrad, Arkhiv Anatomii, Gistologii, i Embriologii, Vol 62, Vyp 3, 1972,
pp 87-94

Abstract: The effect of accelerations on the venae cavae were studied by sub-
jecting 12 cats to craniocaudal rotation on a centrifuge, followed by microscope
examination of sections of both vessels adjacent to the right atrium, and of
the inferior vena cava at the confluence of the common iliac veins 1-14 days
after treatment. Results were compared with sections from three cats not sub-
jected to treatment. In the first 7 days after treatment, the inferior vena
cava is dilated with the lumen appearing as a narrow slit. Endothelial and
muscle cell nuclei are far apart, the muscle layer may be ruptured, and elastic
fibers are distended and loose. These manifestations are more acute near the
atrium than at the common iliac veins, and by the 14th day they tend to become
less severe. Within the 1st 3 days after treatment the superior vena cava is
dilated, with the endothelial and medial layers indistinguishable from each
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USSR

BARDINA, R. A., Arkhiv Anatomii, Gistologii, i Embriologii, Vol 62, Vyp 3, 1972, pp 87-94

other; elastic fibers are scattered and sinuous, and muscle cell nuclei are isolated or in rows. The adventitial layer consists of loose collagen and elastic fibers and membranes. By the 7th through the 14th days collagen fiber bundles are thickened in the adventitial layer, and ruptures are present between elastic fiber bundles in the medial layer, which has become disorganized and distended. The superior vena cava demonstrates greater distention than the inferior. These shifts may be secondary, responding to changes in hemodynamics.

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USSR

UDC 611.13.068:613.73

BARDINA, R. A., Chair of Normal Anatomy, Military Medical Academy Order of Lenin
Red Banner ~~Lenin~~ S. M. Kirov, Leningrad

"Structure of the Main Artery Wall Under Cranio-Caudal Gravitational Loads"

Leningrad, Arkhiv Anatomii Gistologii i Embriologii, Vol 59, No 7, 1970, pp 52-59

Abstract: The adaptation of a structure to changing environmental conditions is one of the most important problems of modern anatomy. Gravitational loads are known to have extreme effects on pilots and cosmonauts. Changes in the common carotid, renal, and femoral arteries were studied in rabbits subjected to longitudinal (head-pelvis) loads produced by centrifugal rotation. In one test series, the normal structure was studied; in a second series, the animals were subjected to the repeated, systematic action of functionally endurable loads (5 to 20 units for 1 to 10 min). A third test series was designed to determine the possibility of reducing or preventing those shifts which were observed in the walls of the main arteries of untrained animals. A pronounced relationship was found between lesions of the arteries and the direction of the gravitational force vector. The most severe lesions, which were observed in the femoral artery wall, could be prevented by training the animals. After proper training, hypertrophy of the muscles holding the femoral and renal arteries was significantly reduced; hypertrophy was completely absent for the common carotid, which has an elastic structure and does not develop hypertrophy as easily.

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1/3 027 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--TRANSISTOR CIRCUIT ANALYSIS AT HIGH FREQUENCIES AND LARGE SIGNALS
-U-
AUTHOR--(03)-~~BARDYLA~~, T.I., RADIONCHYK, K.N., RUDENKO, V.N.
COUNTRY OF INFO--USSR, HUNGARY **B**
SOURCE--PROCEEDINGS OF THE FOURTH COLLOQUIUM ON MICROWAVE COMMUNICATION,
BUDAPEST, 21-24 APRIL, 1970, VOL. IV, MT, MICROWAVE THEORY AND
DATE PUBLISHED---APR70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--CONFERENCE, TRANSISTORIZED CIRCUIT, CIRCUIT ANALYSIS, HIGH
FREQUENCY, NONLINEAR DIFFERENTIAL EQUATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1894 STEP NO--HU/0000/70/004/000/0000/0000
CIRC ACCESSION NO--AT0138774
UNCLASSIFIED

2/3 027

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0138774

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WIDE USE OF TRANSISTORS IN RADIO ENGINEERING EQUIPMENT CAUSES THE NECESSITY OF PROFOUND INVESTIGATION OF HIGH FREQUENCY TRANSISTOR PROPERTIES. LITERATURE POSSESSES SATISFACTORY METHODS OF TRANSISTOR CIRCUITS ANALYSIS AT SMALL SIGNALS. IN CASE OF LARGE SIGNALS AMPLITUDE AT HIGH FREQUENCY THE ANALYSIS OF TRANSISTOR CIRCUITS BECOMES DIFFICULT. THE SOLUTION OF THIS PROBLEM HAS BEEN REALIZED IN DIFFERENT METHODS WHICH HAVE BEEN EVOKED BY TWO CONTRADICTORY REQUIREMENTS, ONE OF PRECISION AND THE OTHER OF SIMPLICITY OF ANALYSIS. THE DIFFICULTY OF AN ANALYSIS IS THAT IT IS IMPOSSIBLE TO DETERMINE IN AN ANALYTICAL WAY THE INTERNAL VOLTAGE THAT DRIVES THE COLLECTOR CURRENT EVEN WHEN THE TRANSISTORS INPUT IS FED WITH HARMONIC SIGNAL. THIS PAPER OFFERS THE ANALYSIS OF THE TRANSISTOR BEING AFFECTED ON ITS INPUT BY TWO LARGE SIGNALS AT FREQUENCIES UP TO THE CUT OFF ONE USING NON LINEAR DIFFERENTIAL EQUATIONS. THE NON LINEAR DEPENDENCIES OF THE COLLECTOR CURRENT, INERTIA AND CONDUCTANCE CONDITIONED BY DIFFUSION AND RECOMBINATION PROCESSES IN TRANSISTOR ARE TAKEN INTO CONSIDERATION. IT IS SUPPOSED THAT THE LOAD RESISTANCE OF TRANSISTOR IS SMALL IN COMPARISON WITH THE OUTPUT IMPEDANCE. THE EQUATIONS OBTAINED FOR THE COLLECTOR AND INPUT CURRENTS MAY BE DETERMINED IN NORMALISED SHAPE BY MEANS OF COMPUTER OR MODEL. THE SUFFICIENT PRECISION OF AN ANALYSIS OF TRANSISTOR CIRCUITS FOR PRACTICE MAKES ABOUT 10-20PERCENT, THEREFORE THE AUTHORS PROPOSE TO DEVELOPE THE ANALYSIS BY MEANS OF MODEL INSTEAD OF COMPUTER. HENCE THE POSSIBILITY TO MODEL THE APPROXIMATIVE EXPRESSIONS WAS TAKEN INTO ACCOUNT BY THEIR CHOICE.

UNCLASSIFIED

3/3 027

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0138774

ABSTRACT/EXTRACT--FACILITY: RADIO ENGINEERING DEPARTMENT OF LVOV
POLYTECHNIC INSTITUTE, LVOV GSP-5, U.S.S.R.

UNCLASSIFIED

USSR

UDC:

BARDYSHEV, I. I., GOL'DANSKIY, V. I., and MOKRUSHIN, A. D., Institute of Chemical Physics of the USSR Academy of Sciences, Moscow

"The Effect of Illumination on the Lifetime of Positrons in Silver Halide Crystals"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 3, Mar 1972, pp 935-937

Abstract: The authors present and discuss the results of measuring the lifetime of positrons in AgCl and AgBr crystals before and after illumination at 300 and 77°K. Generally accepted methodology was used for measuring positron lifetime using an Ortec unit with a 437-A model, time-amplitude converter. The halfwidth of the peak of instantaneous coincidence from Co^{60} is $0.4 \cdot 10^{-9}$ sec. and the logarithmic slope of the sides of the peak is $0.07 \cdot 10^{-9}$ sec. A Na^{22}Cl precipitate is used as a positron source and placed between two mica foils 1 mg/cm^2 thick. Curves are given of the lifetime spectra of positrons in AgCl at room temperature along with a table of the duration and intensity values of the components of the time spectra. The results show that the τ_2 component in ion crystals is related to the formation of A-centers, while τ_3 is caused by the annihilation of positrons in F-centers. Original article: One figure, one table, and 10 bibliographic entries.

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1/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--TRIVIAL NOMENCLATURE OF M, METHANE SERIES COMPOUNDS -U-
AUTHOR--(02)-BARDYSHEV, I.I., ZENKO, R.I.
COUNTRY OF INFO--USSR *B*
SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(5), 432-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DIENE, TERPENE, UNSATURATED HYDROCARBON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1194 STEP NO--UR/0250/70/014/005/0432/0435
CIRC ACCESSION NO--AT0136605
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0136605

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRIVIAL NOMENCLATURE SIMILAR TO THAT FOR THE P,MENTHANE SEREIS WAS WORKED OUT FOR THE M,MENTHANE SERIES WHERE ANALOGS EXISTED AND WHERE TRIVIAL NAMES HAD ALREADY BEEN ACCEPTED FOR THE DIENIC HYDROCARBONS SUCH AS NEOSYLVESTRENE, NEOISOSYLVESTRENE, ALPHA,NEOSYLVESTERPINENE, AND ALPHS,NEOSYLVEPHELLANDRENE. THE CORRESPONDING ALCS., KETONES, AND ALDEHYDES WERE NAMES FROM THE APRENT HYDROCARBON, E.G., AS SYLVESTRENOLS, SYLVESTRENONES, AND SYLVESTRENALS. RETENSION OF GENEVA NOMENCLATURE WAS RECOMMENDED FOR THE LITTLE STUDIED DERIVS., E.G., THOSE OF UNSATD. HYDROCARBONS HAVING ONE DOUBLE BOND.

FACILITY: INST. FIZ.-ORG. KHIM., MINSK, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—REACTION OF CARENE IN THE PRESENCE OF DIATOMITE -U-
AUTHOR—(03)—BARDYSHEV, I.I., BAZYLCHIK, V.V., SHLYASHINSKIY, R.G.
COUNTRY OF INFO—USSR
SOURCE—ZH. OBSHCH. KHIM. 1970, 40(3), 672-6
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—MONOMER, POLYMER, TERPENE, AROMATIC HYDROCARBON, ISOMER
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/0928 STEP NO—UR/0079/70/040/003/0672/0676
CIRC ACCESSION NO—AP0124589
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124589
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PASSING 3,CARENE OVER DIATOMITE AT 250DEGREES WITH 4.5 SEC CONTACT TIME GAVE 86.7PERCENT MONOMERIC PRODUCTS AND 12.8PERCENT POLYMERS. THE FOLLOWING WERE IDENTIFIED CHROMATOGRAPHICALLY AND SPECTROSCOPICALLY: M,MENTH,1,ENE, P,MENTH,3,ENE, P,MENTH,1,ENE, DELTA PRIME4,CARENE, DELTA PRIME3,CARENE, 1,1,4,TRIMETHYLCYCLO,HEPTADIENE, CIS,ISOLIMONENE, L,P,MENTHA,2,4,DIENE, M,1,3,MENTHADIENE AND TERPINENE, GAMMA,TERPINENE, SYLVESTRENE, P,CYMENE, AND L,P,MENTHA,3,8,DIENE. . THUS THE 3,CARENE UNDERGOES ISOMERIZATION INTO THE 4,ISOMER AND RUPTURE OF THE 3 MEMBERED RING IN ALL POSSIBLE DIRECTIONS. FACILITY: INST. FIZ. ORG. KHEM., MINSK, USSR.

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ANHYDRIDES OF LABILE ROSIN ACIDS -U-
AUTHOR-(02)-BARDYSHEV, I.I., STRIZHAKOV, O.D.
COUNTRY OF INFO--USSR *B*
SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(2), 148-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ANHYDRIDE, CHEMICAL SYNTHESIS, OPTIC ACTIVITY, IR SPECTRUM,
ROSIN, ORGANIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1136 STEP NO--UR/0250/70/014/002/0148/0149
CIRC ACCESSION NO--AT0119990
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119990

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANHYDRIDES (I, II, III, RESP.) OF LEVOPIIMARIC, PALUSTRIC, AND NEOABIETIC ACIDS WERE SYNTHESIZED AND THEIR PROPERTIES (M.P., OPTICAL ROTATION, AND UV AND IR ABSORPTION) DETD. THE FIRST 2 ANHYDRIDES HAVE NOT BEEN REPORTED UNTIL NOW. I WAS SYNTHESIZED IN 31.8PERCENT YIELD BY REACTING THE ACID WITH N, N PRIME DICYCLOHEXYLCARBODIIMIDE BY THE PREVIOUSLY DESCRIBED TECHNIQUE (B. AND S., 1968). II WAS SYNTHESIZED IN 56.7PERCENT YIELD BY HEATING 2 HR AT 120DEGREES A SOLN. OF 0.30 G ACID IN 0.5 ML FRESHLY DISD. PYRIDINE TO WHICH 5 ML AC SUB2 O WAS ADDED. III WAS OBTAINED BY THE LATTER PROCEDURE IN 37.4PERCENT YIELD. I-III WERE OPTICALLY INACTIVE; IR SPECTRA ARE REPORTED. FACILITY: INST. FIZ.-ORG. KHIM., MINSK, USSR.

UNCLASSIFIED

USSR

UDC 551.463.288

BARDYSHEV, V. I., KOZHELPOVA, N. G., and KRYSHNYY, V. N., Acoustic Institute, Academy of Sciences, USSR

"A Study of the Laws of Underwater Noise Distribution in Sea and Ocean Coastal Zones"

Moscow, Akusticheskiy Zhurnal, Vol 19, No 2, Mar-Apr 73, pp 129-132

Abstract: Distributions of the instantaneous values of the sound pressure of natural underwater noises were studied experimentally in the surf-noise zone 10-600 meters from the shoreline, at a depth of 2 to 20 m, within the frequency range of 100-8000 Hz, and in the far coastal zone 20 km from the coastline, at a depth of 130 m, within the frequency range of 5-11,000 Hz. In applications lasting 0.05 to 1200 seconds, the distribution law in the far coastal zone is Gaussian, and in the surf-noise zone the distribution law is non-Gaussian and is distributed by considerable excess and asymmetry. The obtained results are discussed. 3 figures. 6 references.

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USSR

~~BARDYSHEV, V. I.~~; VELIKANOV, A. M.; GERSHMAN, S. G.; KRYSINITY, V. I. (Acoustics
Institute of the USSR Academy of Sciences, Moscow)

"Underwater Noise Level of the Ocean as a Function of Wind Velocity"

Moscow, Akusticheskiy Zhurnal; Vol 17, No 2, April-June, 1971; pp 302-3

TRANSLATION: We measured underwater ocean noises at depths of 100 to 130 meters at a distance of 20 km from the shoreline. One hydrophone was attached to a submerged buoy at a depth of 60 meters and was practically unprotected from hydrodynamic noises by the action on it of underwater currents. The second hydrophone was secured at a height of 1.5 meters from the bottom and protected by a deflector which, as indicated by additional studies, substantially lowered the level of hydrodynamic noises at frequencies below 100 cps. Underwater noise levels of the ocean were measured in the third-octave, half-octave, and 1/3 cps frequency bands over an average time of several seconds and were reduced to a band width of 1 cps and expressed in decibels read from the

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USSR

BARDYSHEV, V. I., et al, Akusticheskiy Zhurnal; Vol 17, No 2, April-June, 1971; pp 302-3

level $2 \cdot 10^{-5} \text{ m}^2 \cdot \text{cps}^{-1/2}$. The measurements were made on an average of twice a day over a period of six months. The wind velocity was measured regularly every 3 hours. The Pearson mean square correlation was used for the stochastic dependence of the underwater noise level p on the wind velocity v . At those frequencies for which such a correlation was discovered a further study of it was made: in particular, it was ascertained whether there is a correlation between the conditional mathematical expectations of the processes studied. For this purpose there was calculated a correlation ratio η , which is a measure of any type of correlation: linear as well as nonlinear [1]. Further, the degree of linearity of the dependence of p on v was established, for which purpose the correlation coefficient R was calculated and compared with the corresponding value of η : for $\eta = R$ the dependence is linear; for $\eta > R$, it is nonlinear. To establish the fiducial probability of the assertion $\eta > R$, the method of confidence intervals as well as the distribution F were used [2]. Lines of regression reflecting the type of correlation of p with v were selected by the method of least squares. The calculations were carried out on an electronic computer.

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BARDYSHEV, V. I., Akusticheskiy Zhurnal; Vol 17, No 2, April-June, 1971; pp 302-3

cps	1.0	4.2	8.3	66.7	140	6600	9600
R	0.15	0.18	0.26	0.41	0.51	0.38	0.39
η	0.30	0.28	0.36	0.49	0.59	0.44	0.48

It was established that the correlation of p with v is the most pronounced at the frequencies 100-200 cps, somewhat weaker at frequencies higher than 200 cps, and the weakest at frequencies below 100 cps. For the given measurements by the first hydrophone the stochastic dependence of p on v practically disappears at frequencies below 10 cps (the fiducial probability of a correlation at a frequency of 10 cps does not exceed 50%; at a frequency of 5 cps, 10%). For the given measurements by the second hydrophone a relationship of p with v can be traced through the entire frequency interval of measurements—down to a frequency of 1 cps—so that a correlation appears. In the table the values of η and R are shown for several frequencies for the given measurements of the second hydrophone. For all frequencies the fiducial probability that $\eta > 0$ is not less than 99.9%. The fiducial probability of the assertion that $R > 0$ for a frequency of 2.1 cps is not less than 98%; for frequencies of 8.3 cps and higher, more than 99.9%. The fiducial probab-

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USSR

BARDYSHEV, V. I., Akusticheskiy Zhurnal; Vol 17, No 2, April-June, 1971; pp 302-3

ity that $\eta > R$ appeared to be about 98% for a frequency of 2.1 cps and 80% for frequencies of 8.3 cps and higher. Apparently the correlation of p with v can be considered to be nonlinear. This is confirmed also by the fact that the amplitudes of the distribution of the values of p and v are substantially different from Gaussian. A linear equation of regression can be used only as a first approximation.

The differences in correlation of p and v at low frequencies for the data of the first and second hydrophones are apparently due to the fact that at frequencies below 10 cps with noise recorded by the first hydrophone hydrodynamic pulsation of pressure prevailed, caused by the turbulence of an underwater current (following the terminology of Blokhintsev [3], this effect should be called "pseudo sound"). In the range of measurements made, underwater currents which do not depend on the wind (ebb-flow and constant) predominated. The hydrodynamic noises indicated by the second hydrophone were substantially decreased by the deflection, and noises connected with the wind were more pro-

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BARDYSHEV, V. I., et al, Akusticheskiy Zhurnal; Vol 17, No 2, April-June, 1971; pp 302-3

nounced. Actually, at frequencies of less than 100 cps the spectral noise levels, according to the data of the second hydrophone, are lower in comparison with those measured by the first hydrophone, and at frequencies of 6 cps and lower the difference is 20-26 decibels. At frequencies lower than 10-20 cps the spectral noise levels, according to the data of the first hydrophone, increases 10-12 decibels when the frequency is lowered an octave; according to the data of the second hydrophone, 3.5-5.0 decibels in all.

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2. V. I. Dunin-Barkovskiy, N. V. Smirnov. "Theory of Probability and Mathematical Statistics in Engineering. General Discussion". Moscow, GTTI, 1955.

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USSR

BARDYSHEV, V. I., et al, Akusticheskiy Zhurnal; Vol 17, No 2, April-June, 1971;
pp 302-3

3. D. I. Blokhintsev. "Acoustics of Inhomogeneous Moving Media". Moscow-Leningrad, Gostekhnizdat, 1946.

Submitted for publication 23 April, 1970.

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Measuring, Testing, Calibrating, Control

USSR

UDC 534-14

BARDYSHEV, V. I., VELIKANOV, A. M., GERSHMAN, S. G., Acoustics
Institute, Academy of Sciences, USSR, Moscow

"Some Experimental Investigations of Underwater Ocean Noises"

Moscow, Akusticheskiy Zhurnal, Vol 16, No 4, 1970, pp 602-603

Abstract: According to experimental data obtained earlier, at frequencies below 10-30 Hz the spectral density of underwater ocean noises increases, as the frequency is decreased, on an average by 8-12 db per octave. The supposition has been made that the indicated rise in the energy of underwater noise at low frequencies is brought about by the direct action of turbulent pulsations of hydrodynamic pressure upon the hydrophone when a stream of water flows around it ("pseudosound"); this occurs if the hydrophone is situated in a zone of action of underwater currents or is moved with respect to the thickness of the water. If this supposition is valid, it follows that when underwater noise is measured in the zone of action of underwater currents by a hydrophone protected by a fairing, which decreases the level of $1/2$

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BARDYSHEV, V. I., et al, Akusticheskiy Zhurnal, Vol 16, No 4, 1970, pp 602-603

the pseudosound, the intensity of the underwater noise at low frequencies will be less than when the measurements are made by a hydrophone that is unprotected against the action of the stream. This effect was actually detected in the experimental investigations of underwater ocean noise dealt with in the article. The experimental equipment and procedure are described, and the results are summarized. 1 table, 2 figures, 3 bibliographic entries.

2/2

- 91 -

USSR

BARENBAUM, F. B., ROZENBOYM, S. Sh.

"One Problem of Temporary Optimal Distribution of Resources in Construction"

Ekonomika i mat. metody [Economics and Mathematical Methods], 1973, 9, No 2, pp 339-342 (Translated from *Referativnyy Zhurnal - Kibernetika*, No 8, 1973, Abstract No 8 V574 by Yu. Finkel'shteyn)

Translation: The problem studied is important under conditions of functioning of the production of construction. One possible means for solution is presented on the example of the distribution of the available machinery in a general construction organization.

Suppose m is the number of machines, n is the number of construction projects being serviced; $t_j^H, t_j^K, j=1, 2, \dots, n$ are the moments of beginning and ending of the performance of mechanized operations at object j respectively; $t_j = (t_j^H, t_j^K)$; $\tau_i, i=1, \dots, m$ is the time required to move machine i ; t_{ij}^H, t_{ij}^K are the beginning and end of the j repair cycle of machine i respectively; a_{ij} is the productivity of machine i on project j ; Q_j is the volume of work at project j ; c_{ij} are the corrected expenditures for the

USSR

BARENBAUM, F. B., ROZENBOYM, S. Sh., *Ekonomika i mat. metody*, 1973, 9, No 2, pp 339-342

performance of work by machine i at project j . The Boolean variable below is introduced:

$$x_{ij} = \begin{cases} 1, & \text{if machine } i \text{ is used on project } j, \\ 0, & \text{if not.} \end{cases}$$

The following problem is produced:

$$z = \sum_{i=1}^m \sum_{j=1}^n c_{ij} x_{ij} \rightarrow \min, \quad (1)$$

$$\sum_{i=1}^m x_{ij} = 1, \quad j = 1, \dots, n, \quad (2)$$

USSR

BARENBAUM, F. B., ROZENBOYM, S. Sh., *Ekonomika i mat. metody*, 1973, 9, No 2, pp 339-342

$$x_{ij} + x_{ik} \leq 1, i, k \in \{1, \dots, n\}, j \neq k, t_{ij} \cap t_{ik} \neq \emptyset, \quad (3)$$

$$i=1, \dots, m,$$

$$x_{ij} \geq 0, i=1, \dots, m, j=1, \dots, n, \quad (4)$$

$$x_{ij} - \text{целое}, i=1, \dots, m, j=1, \dots, n. \quad (5)$$

A special algorithm in branches and bounds with a unidirectional branching rule is suggested for the solution of problem (1)-(5). A program is written for the Ural-2 computer, allowing the problem to be solved with $m \leq 50$, $n \leq 75$, which in practice satisfies the requirements of most general construction trusts.

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT7
TITLE--A STUDY OF POSTRADIATION DAMAGE IN SUBMOLECULAR STRUCTURE OF DNA
UNDER DIFFERENT RADIATION CONDITIONS -U-
AUTHOR-(03)-PINTO, R.I., BARENFELD, L.S., GUNCHEV, KH.Z.
COUNTRY OF INFO--USSR
SOURCE--TSITOLOGIYA; 12: 343-51 MAR 1970
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DNA, RADIATION DAMAGE, FLUORESCENCE, THYMUS GLAND, HYDROGEN
BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/2022

STEP NO--UR/9053/70/012/000/0343/0351

CIRC ACCESSION NO--AP0120665

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120665

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHANGES IN THE VISCOSITY AND INTENSITY OF A SECONDARY FLUORESCENCE OF PREPARATIONS OF DNA SUBMOLECULAR STRUCTURES ISOLATED FROM THE RAT THYMUS AFTER IRRADIATION IN VIVO WERE INVESTIGATED USING DIFFERENT DOSES AND RADIATION REGIMES. THE INTENSITY OF THE SECONDARY FLUORESCENCE WAS MEASURED THROUGHOUT A GRADUAL INCREASE OF THE PREPARATION TEMPERATURE FROM 20 TO 60DEGREESC. THE RESULTS SUGGEST THAT DAMAGES TO DNA OBSERVED DURING IRRADIATION ARE CAUSED BY DESTRUCTION OF SUBMOLECULAR STRUCTURES AND LOCAL DAMAGES IN THE SYSTEM OF HYDROGEN BONDS. THE TESTED PROPERTIES OF DNA DEPENDED ESSENTIALLY ON THE EVENTS OCCURRING IN THE CELLS IMMEDIATELY AFTER IRRADIATION. THEREFORE, A SECONDARY IRRADIATION WITH 5 TO 15 MINUTE INTERVALS ALTERED THE PATTERN OF RADIATION DAMAGE, WHEREAS AN IRRADIATION WITH 30 MINUTE INTERVALS RESULTED IN THE ACCUMULATION OF DAMAGE. FACILITY: INST. OF CYTOLOGY, LENINGRAD.

UNCLASSIFIED

USSR

UDC 621.791.75.754.01:533.5

SHIGANOV, N. V., Doctor of Technical Sciences, POTAPOV, YU. D., Engineer,
BARESKOV, N. A., Candidate of Technical Sciences, and MAZOK, V. K., Engineer

"Some Features of Vacuum-Arc Welding With a Hollow Cathode"

Moscow, Svarochnoye Proizvodstvo, No 9, 1973, pp 17-19

Abstract: Results from a study of the main electrical characteristics of arc discharge during vacuum-arc welding with a hollow cathode and with supply of a stabilizing gas, are presented along with the specifics of the process and properties of the produced veld joints. Lanthanum-plated tungsten tubes, 4 mm in outside diameter and 2 mm inside diameter, were used as electrodes. Stainless steel 1Kh18N10T and titanium alloy VT6 were used as the two materials welded (steel-steel and titanium-titanium). It was established that the process of vacuum-arc welding with inleakage of a plasma-forming gas into the arc zone was stable over a large range of welding rates (from 2 to 100 m/hr). With a welding rate of 40 m/hr the coefficient of seam shape changes (the ratio of seam width to height is decreased). It was concluded that when welding with a hollow cathode the change in arc length of 60-70 mm does not change its voltage. A stable arch discharge can be guaranteed here with a very insignificant consumption of plasma-forming gas (0.14-2 l/hr), which makes it possible to produce stable melting upon significant fluctuations of the arc gap.

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USSR

SHIGANOV, N. V., et al., Svarochnoye Proizvodstvo, No 9, 1973, pp 17-19

Mechanical properties and welding characteristics are given for the vacuum-arc welded samples along with the same data for argon-arc welded samples for comparison. 4 figures, 1 table, 3 bibliographic references.

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USSR

UDC 620.1.539.4

KORUNOV, Yu. I., BARESKOV, N. A., Moscow

"Mechanical Properties of Soldered Joints of Certain Alloy Steels at Low Temperatures (Down to -253°C)"

Kiev, Problemy Prochnosti, No. 4, Apr 71, p. 49-52.

Abstract: Results are presented from studies of the mechanical properties (separation and shear strength and impact toughness) at temperatures of 20, -196 and -253°C of soldered joints of type Kh18N10T steel, made using solder based on silver (PSrMtsMN-87, PSr-72, PSrMN-39, PSrMts-38, PSr-37.5), copper (BrOF6.5-0.16; PMNTS 5.5-11.5; PM-17) and manganese plus nickel (G40NKh, G70NKh, PZHK35), as well as the joints of type EP222 steel, made using solder types PSrMts-38; PSr-37.5; G40NKh; G70NKh and PM-17. Also, an attempt is made to estimate the ductility of the soldered joints in Kh17N10T steel from the absolute elongation taken from primary stress diagrams.

It is established that the separation and shear strength of soldered joints of types Kh18N10T and EP222 steel made with all of the solders mentioned above increase with decreasing test temperature from 20 to -250°C , while the ductility and impact toughness decrease. The best combination of plastic, impact and strength properties for joints of Kh18N10T steel is achieved using solders types PSr-37.5 and PM-17.

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USSR

UDC [537.226+537.311.33]:[537+535]

BAKUTIS, I. P., BAKEYKENE, R. M., and VALATSKA, K. K.

"Temperature Dependence of Photovoltaic Effect in CdTe Thin Layers"

V sb. Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds with Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, pp 63-68 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE814 by E. B. K.)

Translation: The authors investigated the temperature dependence of the photovoltage (PV) in photovoltaic CdTe layers in which PV polarity depends on direction of illumination. Specimens were made by simultaneous evaporation of CdTe and Cd; then after the lapse of a certain time cadmium evaporation was halted and only the evaporation of stoichiometric CdTe continued. On illumination of the resultant specimens in the direction of the layer, the magnitude of PV increases at first with a decline in temperature, but starting at a certain temperature, different for each specific wavelength of exciting light it begins to decline and changes its sign. The authors believe that the results can be explained by means of a model which assumes anisotropy of the electrical conductivity of photoactive crystallites and that a high PV is the sum of elementary transverse Dember photoelectromotive forces. No final

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USSR

BAKUTIS, I. P., et al., Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya, 1970, pp 63-68

conclusions can be drawn on the basis of the cited data as to the nature of the observed PV sign inversion with a change in temperature.

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USSR

UDC[537.226+537.311.33]:[537+535]

~~BARBYKIS, V. A.~~, GUOGA, V. I., MATULENENE, I. B., POZHELA, YU. K., and
REPSHIS, V. I.

"Investigation of the Warming-Up of Current Carriers in Nonrectifying Point Contact"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 1, pp 73-79 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE666 from summary)

Translation: The authors measured noise temperature and thermoelectromotive force of hot holes as a function of bias voltage for p-Ge specimens with nonrectifying point contact at room temperature. It is shown that in the point contact the electric field warms the current carriers. For a bulk specimen values of noise temperature for point contact were compared with noise temperature as well as with carrier temperature determined according to thermoelectromotive force measurements.

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AP0026035

SCI. ABST. SER. B

2-70 6180292

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[6012. Calculating torsion in the shafts of electric machines. A.Barg.
M.A.Barg, Y.N.Mishev.
Elektrotehnika (USSR), vol.40 no.1, p.59 (1969). In Russian.
Examines the problem of finding the torsion stresses in prismatic shafts of
arbitrary section and shafts of variable or stepped section including those
undercuts. Functions are obtained for use in the case of ring-shaped undercuts.
An example shows the method of solving the case of the shaft of rhombic
section. The maximum stress is found for this case and shown to coincide
satisfactorily with a previously known result. J.H.B.G.

Sw

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4

ACC. NO.

AP0049521

Abstracting Service:
CHEMICAL ABST. 5-70

ker. Code

4R0032

102891v Studying the occlusion of hydrogen by steel under stress. Kivachko, Yu. A.; Barg, L. G.; Starchak, V. G.; Kuslitskin, A. B. (Lvov. Politekh. Inst., Lvov, USSR). *Zavod. Lab.* 1970, 36(1), 40-2 (Russ). H, when occluded by steel, reduces ductility while increasing brittleness and likelihood of corrosion cracking. Previous expts. were carried out on the H occlusion by unstressed steel and the quant. detn. of the vol. of occluded H. The present investigation used the same techniques except that the sample studied was placed in a special fixture which stressed it over radii of 80, 120 and 240 mm. The length of sample exposed to cathodic polarization in 10% H₂SO₄ at a c.d. of 0.1 A/cm² was 20 cm with the ends rendered non-conductive by a lacquer or paraffin. H content was detd. by collecting the gas evolved when the sample was anodically treated in an electrolyte comprising NaK tartrate and NaCl. Stressed samples always occluded more H than the undistorted samples, while other factors such as steel compn., production techniques, heat treatment, annealing temp., and impurities altered the abs. vol. of occluded H. Herman Koretzky

REEL/FRAME
19801384

USSR

UDC 539.3

KOSMODAMIANSKIY, A. S., KATS, L. YE., and BARG, YA. A., Donetsk State Institute; VNIIGidroprivod All-Union Scientific Research, Planning and Design Institute of Hydraulic Drives)

"An Approximate Method Based Upon the Use of a Hydrodynamic Analogy"

Kiev, Prikladnaya Mekhanika, No 4, Apr 73, pp 57-62

Abstract: A method of hydraulic analogy is presented, based upon the similarity of physical stress fields in an elastic region and pressures in a steady flow of liquid in two-dimensional problems of elasticity and hydrodynamics theory. The analogy is as follows: If the region of flow of a two-dimensional potential steady flow of an ideal incompressible fluid is similar to an isotropic elastic region, with a free contour acting as a hard, immovable wall, and the boundary conditions in both regions are analogous, the stress distribution at any contour is similar to the pressure distribution at the corresponding flow boundary. This analogy simplifies the investigation of stress concentrations in simply connected and multiply connected regions of complex shape by means of the theoretical and experimental methods of aero- and hydrodynamics. The method of hydrodynamic analogy is used illustratively to solve problems of stress distribution beside an elliptical opening and a streamlined fillet.

9 references.

1/1

USSR

UDC 536.3:669.24

BARGAFTIK, N. B., VOSHCHININ, A. A., Moscow Aviation Institute imeni
S. Ordzhonikidze

"Experimental Determination of Integral Radiation Capacity of Nickel"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 24, No 2, Feb 73, pp 290-293.

Abstract: Experimental data are produced on the integral radiation capacity ϵ of polished nickel, and the capacity of nickel exposed to alkali metal vapors. A general equation is suggested for ϵ in the temperature interval from 0 to 1400°C. The formula, $\epsilon = 0.05 + 0.135 \cdot 10^{-3}t$, where t is in °C, can be used for the temperature range from 500 to 1400°C with an accuracy of $\pm 5\%$. In the 0-500°C interval, the accuracy decreases to $\pm 10\%$.

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1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYSTEMATIZATION OF DRYING PROCESSES FOR SEMIFINISHED LEATHER
PRODUCTS -U-
AUTHOR-(03)-KERIPIN, A.G., LIVYY, G.V., BARGINSKIY, M.A.
COUNTRY OF INFO--USSR
SOURCE--KUZH. GBUV. PRUM. 1970, 12(3), 27-32
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TANNING MATERIAL, LEATHER
CENTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1733 STEP NO--UR/0498/70/012/003/0027/0032
CIRC ACCESSION NO--AP0125354
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125354

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVERAL METHODS USED FOR DRYING
CHROME TANNING UNFINISHED LEATHERS ARE DISCUSSED AT LENGTH. THE KNOWN
METHODS AND THOSE PRESENTLY BEING DEVELOPED WERE TABULATED AND THEIR
ADVANTAGES AND DISADVANTAGES NOTED.

UNCLASSIFIED

USSR

UDC 539.385

BARGYALIS, A. S., MEDEKSHA, G. G., DAUNIS, M. A., TIMOFEYEV, B. T.

"Behavior of Pearlitic Welded Seams with Low-Cycle Loading at High Temperatures"

Soprotivl. Materialov. Materialy XXII Resp. Nauch.-tekhn. Konf. [Strengths of Materials, Materials of XXII Republic Scientific and Technical Conference -- Collection of Works], Kaunas, 1972, pp 32-36, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V1226 by A. P. Gusenkov).

Translation: The static and cyclical strength and ductility characteristics of materials 15Kh2MP, 22K and Kh18N22V2T2 at 350° are presented. Diagrams of static deformation, values of yield points and strength, rupture resistance and coefficient of reduction in area are produced. Curves of low-cycle fatigue are constructed for rigid loading in the coordinates initial loading deformation vs. number of cycles to crack formation. The maximum durability is $5 \cdot 10^4$ - 10^5 cycles.

1/1

Lasers & Masers

USSR

UDC: 621.378.385

BALTAKOV, F. N., ~~BARISHIN, B. A.~~, KORNILOV, V. G., MIKHINOV, S. A.,
RUBINOV, A. N., and SUKHOANOV, L. V.

"Pulse Laser Using 6Zh Rhodamine Solution in Ethyl Alcohol with a
Radiation Energy of 110 Joules"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, vol 42, No 7, 1972,
pp 1459-1461

Abstract: The laser described in this paper is pumped by a special lamp and uses a reflector space filled with MgO powder. Length of the ring-shaped discharge space is 45 cm, with a gap of 1 cm, and the space is filled with xenon at a pressure of 10 torr. A cross section of the laser as well as a cross section of the vessel serving as the inner wall of the laser are shown in diagram form. A filter of NaCOOCH_3 was used to absorb ultraviolet light shorter than 230 nm and thus weaken the tendency to decay of the 6Zh rhodamine solution under light, with resultant increase in radiational energy. Curves are plotted for the current and voltage of the pumping pulse and the oscillation pulse as functions of time. The brightness temperature of the discharge was computed at about $20,000^\circ \text{K}$. The wavelength of the radiation generated was 590 nm and the width of the oscillation line 20 nm. The authors are associated with the Physics Institute of the Belorussian Academy of Sciences at Minsk.

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BARIKENKO, V. P.

ADVANCED TRAINING FOR ADMINISTRATIVE PERSONNEL IN PUBLIC HEALTH

UPOI 010.2.08.2.005.1001

Article by Professor G.P. Kozlov, Docent V.P. Barikenko, Chair of Social Hygiene and Public Health Organization, Dnepropetrovsk Medical Institute, Moscow, Sovetskoye Zdravookhraneniye, Pustyni, No 9, 1972, submitted 11 April 1972, pp 56-57

In accordance with an order of the Ukrainian Minister of Health, dated 22 June 1971, courses were organized under the chair of social hygiene and public health organization of Dnepropetrovsk Medical Institute for advanced training of chief physicians of municipal hospitals and MSU (medical and sanitary units) in the republic. In accordance with the recommendations of the republic's methodological council on organizing advanced training of public health officers, a curriculum was prepared as well as a rigid schedule providing for 6-hour daily classes (two hours of lectures and four hours of practical work). The course of lectures deals with problems in social hygiene and public health organization in the light of the decisions of the 24th Congress of the CPSU, social problems in medicine (prevention of cardiovascular and oncological diseases), Ukrainian law pertaining to public health, scientific organization of labor (NOT), economic problems in public health, planning, social insurance, medical expertise of disability, dentology, organization of propaganda of medical and hygienic information.

A professor and docent deliver the lecture course, "Development of public health in the ninth five-year period" and "Results of the 12th Union conference of public health activists," are topics presented in each cycle by the head of the oblast health department, A.Ye. Kozmenko, candidate of medical sciences.

Practical studies are prominent in the teaching of health organization. Here the chief physicians perform independent assignments dealing with standardization, evaluation of reliability of statistical data, determination of parameters of mean values, proper use of intensive and extensive indices. For this purpose, special individual assignments are prepared and printed. When presenting theoretical issues in statistics, its methodological bases are described, the priority of quality, the importance of

JRS 57351

27 Oct 72

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USSR

UDC: 621.165.175:536.1

ZYSIN, V. A., BARILOWICH, V. A.

"Thermodynamics of a Flow of Evaporating Liquid in the Case of High Pressure Gradients"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodil'n. prom-sti (Works of the All-Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 137-146 (from RZh-Turbostroyeniye, No 8, Aug 70, Abstract No 8.49.21)

Translation: The thermodynamic method is used with regard to peculiarities of the mechanism of the actual process to analyze and calculate the process of vaporization of a superheated liquid. Rather than taking the condition of bubble formation in the flow nucleus behind the boiling front as the determining factor, the authors proceed from the actual nature of hydrodynamics of viscous flow, taking the development of vapor formation throughout the cross section of the flow under limiting outflow conditions, since conditions which are more favorable for vapor formation are created in the boundary layer in this case. In effecting the initial thermodynamic analysis, the complexes which account for initial underheating and the work of forces

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USSR

ZYSIN, V. A., BARILOVICH, V. A., Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhn. in-t kholodil'n. prom-sti Leningrad, 1970, pp 137-146

of friction lead to quantitative changes in the evaluation of the process which coincides with reality. The way in which the critical ratio between pressure and the coefficient of velocity depends on the degree of underheating is determined, and a divergence within limits of 5% between theory and experiment indicates that flows of wet steam may be treated as mechanically one-dimensional at supercritical velocities. This makes it possible to study such flows by purely thermodynamic methods and to determine the degree of dryness of the flow, the enthalpy of the liquid phase and its temperature, and losses of energy due to disruption of thermodynamic equilibrium. Four illustrations, bibliography of five titles. L. F. Kallistova.

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1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MAGNESIUM PERBORATE PREPARATION -U-
AUTHOR--(02)-BARINBERG, YE.O., FASTIVETS, S.I. *B*
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,576
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970, 47(8)
DATE PUBLISHED--10FEB70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, CHEMICAL PATENT, MAGNESIUM COMPOUND,
SODIUM BORATE, NITRATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1836 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0132101
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0132101
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MG PERBORATE IS PREPD. BY REACTING
MOISTENED MG(NO SUB 3)SUB 2 WITH NA PERBORATE, WITH SUBSEQUENT WASHING
OF THE PRODUCT WITH H SUB 2 O.

UNCLASSIFIED

USSR

UDC 669.71'777.053.27

BARINOV, G. I., and SHURYGIN, P. M.

"Diffusion of Impurities in Liquid Aluminum and Tellurium"

V. sb. Vakuumn. protsessy v tsvetn. metallurgii (Vacuum Processes in Non-ferrous Metallurgy -- Collection of Works), Alma-Ata, "Nauka," 1971, pp 156-162 (from Referativnyy Zhurnal -- Metallurgiya, No 6, Jun 71, Abstract No 6G141)

Translation of Abstract: Results are given of experimental determination of the coefficient of diffusion for Si, Ge, Ti, Fe, Co, Ni, and Mo in molten Al and Te by the method of solution rotation at 550-950°. (Six illustrations; 13 bibliographic entries)

1/1

- 2 -

USSR

UDC 621.165.004.68

BARINBERG, G. D.

"Improving the Thermal System of a PT-135/165-130/15 Turbine"

Sverdlovsk, Opyt sozdaniya turbin i dizeley -- sb. (Experiences in Building Turbines and Diesel Engines -- Collection of Works), 2d Edition, 1972, pp 47-51 (from Referativnyy Zhurnal -- Teploenergetika, No 3, 1973, Abstract No 3S18)

Translation: The PT-135/165-130/15 turbine has a rated output of 135 Mw for initial steam parameters of 130 kg/cm² and 565°C. It has a regulatable productive power takeoff and two heating takeoffs for gradual heating of the water in the network. The design of the TsVD [high-pressure cylinder] makes it possible to bleed off up to 90 tons of steam per hour at a pressure of 40 kg/cm². The TsND [low-pressure cylinder] also allows up to 75 tons of steam per hour, at a pressure of about 6 kg/cm², to be bled off for external heating purposes. These takeoffs make it possible to eliminate the use of reduced live steam or throttled steam with higher initial parameters, such as the steam from the productive power takeoff. The presence of an unregulatable steam takeoff in the TsND, regulatable heating takeoffs, and the possibility of using the heat of the steam that enters the condenser (as provided for in the turbine's design), makes it possible to use the turbine to gradually heat and deaerate water as it is added. This water makes up for the loss of condensate by both

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USSR

BARINBERG, G. D., Opyt sozdaniya turbin i dizeley -- sb., 2d Edition, 1972, pp 47-51

the turbine itself and by the type R turbines that are found in heat and electric power stations. The author also discusses the possibility of using unregulatable takeoffs in the TsVD and TsND to cover the internal needs of a heat and electric power station, in addition to the comparative efficiency of various methods of preheating additional water. The feeding of the additional water (which replaces the condensate lost through the productive power takeoff) into the condenser's steam space increases turbine efficiency, when compared with the method of feeding it into an atmospheric deaerator. (3 illustrations; 3 bibliog. ref.)

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--UPTAKE BY ALGAE AND PLANKTON OF NATURAL AND ARTIFICIAL RADIONUCLIDES
IN THE OCEAN -U-
AUTHOR--(03)-BARINOV, G.V., BLINOV, M.V., GRITCHENKO, Z.G.
COUNTRY OF INFO--USSR *B*
SOURCE--(AEC-TR-7128, PP 59-61) TRANSLATED FROM REPORT A-AC-82-G-L-1254
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--OCEAN RADIOACTIVITY, THORIUM ISOTOPE, RADIOACTIVITY
MEASUREMENT, ALGAE, PLANKTON, SEAWEED
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1768 STEP NO--UR/0000/70/000/000/0059/0061
CIRC ACCESSION NO--AT0054606
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0054617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRONTIUM 90 CONCENTRATIONS WERE MEASURED IN THE WATER OF THE ATLANTIC AND PACIFIC OCEANS AND CONCENTRATION FACTORS IN PLANKTON WERE CALCULATED. METHODS OF COLLECTING PLANKTON AND CALCULATION OF CONCENTRATION FACTORS ARE DESCRIBED. RESULTS SHWOED THAT THE STRONTIUM CONTENT OF PLANKTON TAKEN FROM VARIOUS RETIONS OF THE ATLANTIC AND PACIFIC OCEANS WAS VERY SMALL. THE CONCENTRATION FACTORS WERE VIRTUALLY IDENTICAL AND VARIED WITHIN A RANGE OF 1 TO 3 UNITS. IT APPEARS THAT STRONTIUM IS GENERALLY CONCENTRATED TO A VERY SMALL EXTENT BY SEA AND OCEAN PLANKTON AND THAT PLANKTON PLAYS A NEGLIGIBLE ROLE IN THE VERTICAL TRANSPORT OF BOTH STABLE AND RADIOACTIVE STRONTIUM FROM THE SURFACE LAYER OF THE OCEAN IN WHICH THE MAIN PLANKTON BIOMASS IS DISTRIBUTED. THIS CONCLUSION RELATES PRIMARILY TO THE SUBTROPICAL AND TROPICAL REGIONS OF THE PACIFIC WHERE THE PLANKTON BIOMASSES ARE SMALL. FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII SSSR, MOSCOW.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SPECTROGRAPHIC ANALYSIS OF BINARY ALLOYS. I. ANALYSIS OF ZIRCONIUM
AND HAFNIUM ALLOYS -U-
AUTHOR--(03)-KORNEYEV, V.A., BARINOV, I.P., ISAYEVA, O.G.
CCOUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM.: 25: 732-6 (APR 1970)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--SPECTROGRAPHIC ANALYSIS, BINARY ALLOY, ZIRCONIUM COMPOUND,
HAFNIUM COMPOUND, SPECTROGRAPH, QUANTITATIVE ANALYSIS/(U)OFSB
SPECTROGRAPH
CENTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3C01/0457 STEP NO--UR/0075/70/025/000/0732/0736
CIRC ACCESSION NO--AP0126209
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126209

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS ARE SUGGESTED FOR THE DIRECT QUANTITATIVE SPECTROGRAPHIC ANALYSIS OF ZIRCONIUM HAFNIUM ALLOYS. SPECTRA WERE EXCITED IN A HIGH FREQUENCY SPARK (A COPPER ELECTRODE) AND PHOTOGRAPHED ON A DFS-I SPECTROGRAPH (DISPERSION 3 A-MM) WITH A THREE LENS SYSTEM OF SLIT ILLUMINATION. THE ANALYSIS OF ONE SAMPLE BY TWO SPECTRA TAKES ABOUT 30 MIN, THE ANALYSIS OF 20 SAMPLES TAKES ABOUT 3 HOURS.

UNCLASSIFIED

USSR

UDC 543.42

B
KORNEYEV, V. A., BARINOV, I. P., and ISAYEVA, O. G.

"Spectral Analysis of Binary Alloys in a Wide Range of Components.
Communication 1. Analytical Methods for Zirconium and Hafnium Alloys"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 4, Apr 70,
pp 732-736

Abstract: Three methods for direct quantitative spectral analysis of Hf-Zr alloys in the concentration range 0.5-99.5% have been proposed: the method of three standards, and rapid methods of three lines and three-staged relaxator with mean square error of 5-7, 6-8, and 7-10% respectively. Spectra were excited in a high frequency spark (with a copper electrode) and polarographed on a DFS-8 spectrograph (with a dispersion of 3A/mm), using a three lens system of the slit illumination. The rapid methods permit the analysis to be carried out without using standards. The analysis of one sample by two spectra requires about 30 min, while analysis of 20 samples -- only 3 hrs.

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Acc. Nr. **AP0029114**

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhatrii, 1970,
Vol 70, Nr 1, pp **65-71**

THE NEUROLOGICAL SYMPTOMATOLOGY OF ATHEROSCLEROTIC
ANEURYSMS OF THE ABDOMINAL AORTA WITH LERICHE'S SYNDROME

N. K. Bogolapov, A. V. Pokrovskiy, N. P. Barinova

The report deals with an analysis of neurological disorders in 13 patients with atherosclerotic aneurysms of the abdominal aorta and with the syndrome of Leriche. The following neurological syndromes could be elicited in this form of pathology: 1) vegetative-trophic; 2) radiculo-neuritic; 3) syndromes of spinal insufficiency — transitory and stable. The clinical picture as a rule was characterized by changes of the sacrolumbar plexus and its separate branches, changed vegetative innervation and affection of the spinal marrow. An analysis of neurological changes in this form of pathology as the authors assume, gives a supplementary criteria for early diagnosis, for the localization of the pathological process and the determination of the stage in the course of the disease.

REEL/FRA

ME 2
19680625

USSR

UDC 629.78.015:533.6.015.04

BARINOV, V. A., ZUBTSOV, A. V.

"Flow of a Viscous Fluid on a Wavy Surface of a Sliding Wing"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1970, Vol. 1, No. 6, pp 75-81 (from RZh-Raketo-stroyeniye, No 9, Sep 71, Abstract No 9.41.60)

Translation: The effect of surface waviness on the flow over a sliding wing is investigated. The problem is solved for small wavelengths under the assumption that the wave amplitude is much less than the thickness of the boundary layer. In this case the solution of the problem is broken up into a nonviscous solution and the solution of the boundary layer equations. It is shown that perturbations caused by waviness in a nonviscous flow appear in a very thin zone near the wall, the thickness of which is of the order of a wavelength. The nonviscous solution for perturbations in the neighborhood of each point of the surface coincides with the solution for a certain equivalent wavy plate in an ideal flow with a velocity equal to the local velocity of the unperturbed flow. An example of a numerical calculation of the three-dimensional boundary layer on a sliding

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USSR

BARINOV, V. A., ZUBTSOV, A. V., Uch. zap. Tsentr. aero-gidrodinam. in-ta,
1970, Vol. 1, No. 6, pp 75-81

wing is given. The results show that the waviness of the surface may produce
a considerable change in the characteristics of the dynamic boundary layer
and a redistribution of thermal flows on the wing surface. 5 ill., 4 ref.
Resume.

2/2

- 7 -

USSR

UDC 532.526

BARINOV, V. A., ZUBTSOV, A. V.

"Flow of a Viscous Liquid on the Wavy Surface of a Slipping Wing"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aero-hydrodynamic Institute), 1970, Vol 1, No 6, pp 75-81 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B584)

Translation: A study was made of the effect of waviness of the surface on flow around a slipping wing. The problem is solved for small wavelength under the assumption that the wave amplitude is much greater than the thickness of the boundary layer. In this case, the solution of the problem degenerates into the nonviscous solution and the solution of the boundary layer equations. It is demonstrated that disturbances caused by waves in a nonviscous flow appear in a very thin wall zone the thickness of which is on the order of the wavelength. Here, the nonviscous solution for disturbances in the vicinity of each point of the surface coincides with the solution for an equivalent wavy plate around which an ideal flow takes place with a velocity equal to the local velocity of the undisturbed flow.

An example of a numerical calculation of the three-dimensional boundary layer on a slipping wing is presented. The results of the calculation demonstrate that the waviness of the surface can cause an essential variation in the characteristics of the dynamic boundary layer and redistribution of the thermal fluxes on the surface of the wing.

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USSR

UDC 621.375.82

BARINOV, V. V., and SOROKIN, S. A.

"Explosions of Water Drops Under the Action of Optical Radiation"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 5-11 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D895 from authors' abstract)

Translation: An experimental study was made of the effect of high-power laser radiation on a drop of water $\sim 10^{-2}$ cm in size. The drop disintegrates under the action of the radiation. The disintegration is explosive in character and is due to the boiling up of strongly superheated water at individual hot points which appear as a result of the nonuniform distribution of the light field over the volume of the drop. Bibliography with 14 titles.

1/1

~~SECRET~~ COOLANT FOR COLD WORKING OF METALS -U-

AUTHOR--(05)-SOKOLOVSKAYA, V.V., RUDNEV, A.V., GARIBOV, V.R., LEYN, YU.I.,
BARINOV, V.YE.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,581

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970,

DATE PUBLISHED--03MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALWORKING LUBRICANT, CHEMICAL PATENT, HEAT TRANSFER FLUID,
GLYCEROL, ETHYLENE GLYCOL

CONTRL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/0093

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0127720

UNCLASSIFIED

2/2 023

IRC ACCESSION NO--AA0127720

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE LIQ. CONTAINS CALCINED
SODA 0.3-0.4, NANO SUB2 0.12-0.14, NA TARTRATE 0.14-0.16, NAOH
0.03-0.05, GLYCEROL OR ETHYLENE GLYCOL 0.002-0.005, AND H SUB2 O TO MAKE
100PERCENT. FACILITY: VSESOUZNY NAUCHNO, ISSLEDOVATEL'SKIY
INSTRUMENTAL'NYY INSTITUT.

UNCLASSIFIED

USSR

UDC 537.311.3:546.26'28

BARINOV, YU.B., BULGAKOV, YU.V., DEM'YANCHIK, D.V., IGLITSYN, M.I., IL'IN, M.A., KASAGANOVA, M.G., PAVLCV, N.M., SOLOMATIN, V.N.

"Effect Of Irradiation On The Physical Properties Of Hexagonal Silicon Carbide"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol. 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 105-110 (from RZh--Elektronika i yeye primenaniye, No 10, October 1971, Abstract No 10B36)

Translation: The effect was studied of irradiation by α particles and neutrons on the spectra of electronic paramagnetic resonance and the optical spectra of n-type α -SiC doped with nitrogen and p-type doped with boron. In the spectra of the electronic paramagnetic resonance of n-type specimens, the irradiation caused a decrease of the old and the appearance of a number of new lines. Irradiation of p-type crystals by α -particles lead to an increase of the optical absorption in the 2--25 micrometer region and irradiation by neutrons caused an increase of absorption at $\lambda < 0.55$ micrometer and a decrease of absorption in the $0.55 < \lambda < 6$ micrometer region. 3 ill. 1.v.

1/1

Acc. Nr: AP0046255

Ref. Code: UR 0511

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp 39-42

B
L. P. Barinova - THE CHARACTERISTICS OF THE ACTION OF SPRING
EXTENDING ARCHES IN REMOVABLE ORTHODONTIC APPARATUS (ON
THE BASIS OF MATHEMATICAL ANALYSIS)

Summary. On the basis of mathematical calculations it was established that the action of springs not always correspond with the action of the orthodontic apparatus, inasmuch as in the action of springs there may occur conditions when in constant external exertions the static loadings will sharply rise. In view of this the measurement of the activity of mechanical elements in orthodontic apparatus, based on determination of their elastic properties without consideration of the direction of forces, will not characterize the activity of the action of orthodontic apparatus studied. Theoretical investigations have shown that the action of removable apparatus with spring arches occurs not only in the transverse but also in the sagittal planes. This enabled to recommend the sites of fixation of deflexing ends of the spring arch at the basis of the removable orthodontic apparatus.

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REEL/FRAME
19781373

DI 2

USSR

UDC 576.858.6:616.155.392

BARINSKIY, I. F., SHUBLADZE, A. K., BOCHAROV, A. F., FILATOV, F. P., and
DEMENT'YEV, I. V., Institute of Virology imeni D. I. Ivanovskiy, Academy of
Medical Sciences USSR, Moscow

"Leukocytic Virus of Human Leukemia"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 70, pp 729-730

Abstract: Three virus strains were isolated from donor cultures obtained from leukemia patients. The strains were not stable and decomposed on treatment with ether or after thermo-inactivation at 60°C for 30 minutes. They were apathogenic with respect to test animals (rabbits, adult mice, rats, guinea pigs) and chick embryos. They did not exhibit pronounced cytopathic activity in lung tissue and similar cultures. The leukocytic leukemia virus was found to have a density of 1.184 g/cm³, which corresponds to the densities of known leukosis viruses of mice and birds. Electron-microscopic studies established the existence of typical leukemia particles with the characteristic morphology.

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USSR

UDC 539.3

BARISHPOL'SKIY, B. M., MAKEYEVA, Z. A.

"Solution of the Problem of the Bending of Thin Plates by the Polarization-Optical Method"

V sb. Modelir. pri issled. stroit. konstruktsiy (Modeling in the Study of Structures -- Collection of Works), Kiev, 1972, pp 11-12 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V198)

Translation: It is proposed that numerical methods be used in conjunction with polarization-optical methods in studying the stress-deformation state of thin plates. Stresses on the boundary are determined on the basis of data on polarization-optical measurements of cuts made along the contour of a frozen model of the plate. Then the sum of the major stresses is determined for a singly connected plate from the solution of the Dirichlet problem for the Laplace equation and the values of the bends are obtained from a solution of the Poisson equation. V. P. Netrebko.

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1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INTERNAL CONVERSION COEFFICIENTS IN M SUBI-III SUBSHELLS OF AN ATOM
ZETA EQUALS 94 BY TAKING INTO CONSIDERATION GASPAR SCREENING BY USING
AUTHOR--(03)-BARISOGLLEBSKIY, L.A., TRUSOV, V.F., SHULYAKOVSKIY, G.S.
COUNTRY OF INFO--USSR
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. FIZ. MAT. NAVUK 1970, (1),
101-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELECTRON TRANSITION, COULOMB INTERACTION, CHARGE DENSITY,
ELECTRON STRUCTURE, HEAVY NUCLEUS, ELECTRON INTERACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1493 STEP NO--UR/0428/70/000/001/0101/0106
CIRC ACCESSION NO--AP0118480

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118480

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. INTERNAL CONVERSION ON THE M SHELL OF AN ATOM IS A PROCESS IN WHICH SCREENING OF THE NUCLEUS BY E PLAYS AN IMPORTANT ROLE. COEFFS. OF INTERNAL CONVERSION (CIC) CALCD. BY TAKING THIS SCREENING INTO CONSIDERATION HAD VALUES 50-200PERCENT LOWER THAN THOSE CALCD. ON THE ASSUMPTION OF AN UNSCREENED NUCLEUS AND AGREED WELL WITH EXPTL. RESULTS. IN EARLIER WORK THE METHOD OF CALCG. SCREENING ACCORDING TO GASPAR WITH SEMIEMPIRICAL CORRECTIONS WAS APPLIED BY T., ET AL. 1968, IN THE CALCN. OF CIC VALUES FOR THE M SHELL OF AN ATOM WITH ZETA EQUALS 65. IN THIS INSTANCE, THE SAME METHOD WITH SOME MODIFICATIONS WAS APPLIED IN THE CALCN. OF CIC FOR AN ATOM WITH ZETA EQUALS 94. ELEC. AND MAGNETIC CIC FOR THE SUBSHELLS M SUBI, M SUBII, AND M SUBIII WERE CALCD. THE RELATIONS BETWEEN THE CIC VALUES AND TRANSITION ENERGIES; THOSE BETWEEN CIC RATIOS M SUBI-M SUBII, M SUBII-M SUBIII AND TRANSITIONS ENERGIES; AND THE EFFECTIVE PARAMETERS SIGMA SUBEFF EQUALS ZETA MINUS ZETA SUBEFF (CALCD. BY RELATING DETD. VALUES OF CIC TO THOSE LISTED IN M. E. ROSES'S TABLES) WERE DERIVED. FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

USSR

UDC 539.23+539.103

BARIT, I. YA., BALASHKO, YU. G., DUL'KOVA, L. S., and ZAVARZINA,
V. P.

"Using Fine Organic Films in Nuclear Physics Experiments"

Moscow, Probory i Tekhnika Eksperimenta, No 1, Jan-Feb 71,
pp 57-60

Abstract: The experimental work described in this paper was done in connection with measurements of deuteron polarization in ^4He elastic dispersion in the energy range of 1 to 2 Mev. Such organic materials as nitrocellulose, polycaprolactam resin and fiber, and nylon, were subjected to tests for mechanical rigidity and imperviousness to the gas. The most satisfactory materials proved to be polycyromellitimide. Windows of this material were made to enclose helium at a pressure of 140 atmospheres and had to separate this high-pressure gas region from a space with a pressure of less than 10^{-2} atmospheres. The article describes the preparation and testing of the windows and the process of measuring the film thicknesses. There were two such processes: one by passing alpha particles through the film, the other through the shift in maximum (p, α, γ) reaction

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USSR

BARIT, I. YA., et al., Priory i Tekhnika Eksperimenta, No 1,
Jan-Feb 71, pp 57-60

of 19F. A table is given of the change in film thickness, as
measured by both these methods, under proton bombardment.
There is also a second table comparing the characteristics of
films made of various organic substances.

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USSR

UDC 577.391.612.419

BARKALAYA, A. I., and KRYLOVA, T. G., Institute of Biophysics, Ministry of Health USSR, Moscow

"The Stimulating Effect of Insulin on the Hemopoietic Process in Bone Marrow in Cases of Acute Radiation Sickness"

Moscow, Radiobiologiya, Vol 12, No 1, Jan/Feb 72, pp 103-107

Abstract: In order to study the effect of insulin on hemopoiesis in bone marrow, 197 white rats were exposed to 750 r gamma-irradiation and injected with 0.1-0.2 units/kg of insulin. The results showed that insulin regulates glycemia and prevents persistent hyperglycemia, hypoglycemia, and repeated hyperglycemic reaction. Regulating glycemic and glycocorticoïdal homeostasis with insulin facilitates the restoration of all types of bone marrow hemopoiesis, which is probably determined by predominance of hemocytoblasts, early generation of bone marrow cells at the beginning of the experiment, and more intense mitotic activity. The stimulating effect of insulin may be due to its ability to supply cells with glucose and amino acids and to participate in their energetic and plastic processes.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE ELECTROCARDIOGRAPHIC REFLECTION OF PREMEDICATION, INFUSION
ANESTHESIA AND INTUBATION OF THE TRACHEA IN CHILDREN -U-
AUTHOR--(03)--BARKALAYA, B.B., LEYCHUK, N.N., STAZHADZE, L.L.

COUNTRY OF INFO--USSR

B

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 3, PP
66-69
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTROCARDIOGRAPHY, ANESTHESIA, PEDIATRICS, ATROPINE,
BARBITURATE, MUSCLE RELAXANT

CGNTRL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/1895

STEP NO--UR/0481/70/000/003/0066/0069

CIRC ACCESSION NO--AP0129248

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129248

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS REPORT THE ELECTROCARDIOGRAPHIC DATA IN PREMEDICATION, INFUSION ANESTHESIA AND INTUBATION OF THE TRACHEA IN 107 CHILDREN, AGED 1 AND ONE HALF-14 YEARS. INTRAVENOUS INJECTION OF A MIXTURE OF PROMEDOL AND ATROPINE CAUSED SIGNIFICANT ELECTROCARDIOGRAPHIC SHIFTS, WHEREAS INTRAMUSCULAR PREMEDICATION PRACTICALLY PROVOKED NO SHIFTS IN THE ELECTROCARDIOGRAPHIC PATTERN. BARBITURATE INFUSION IS ACCOMPANIED BY INHIBITION OF THE MYOCARDIAL CONTRACTILE CAPACITY WITH MANIFESTATIONS OF DISTURBANCE OF THE ATRIOVENTRICULAR CONDUCTION. INFUSION NITROUS OXIDE PLUS ETHER PLUS OXYGEN ANESTHESIA CAUSES INSIGNIFICANT ELECTROCARDIOGRAPHIC SHIFTS IN THE STAGE OF EXCITATION WITH REVERSION TO INITIAL INDICES IN THE TOLERANT STAGE. INTUBATION OF THE TRACHEA IN THE TOLERANT STAGE AGAINST THE BACKGROUND OF TOTAL CURARIZATION PRODUCED NO SIGNIFICANT ELECTROCARDIOGRAPHIC ALTERATIONS. ENDOTRACHEAL INTUBATION IN I SUB3-II STAGE OF ANESTHESIA WITH THE USE OF DEPOLARIZING MUSCLE RELAXANTS WAS ATTENDED BY A SIGNIFICANT TACHYCARDIA AND VENTRICULAR EXTRASYSTOLE.

FACILITY: RESPUBLIKANSKAYA BOL'NITSA MINISTERSTVA ZDRAVOOKHRANENIYA ARKHAZSKOY SSSR, NAUCHNO-ISSLED. INSTITUT SKOROY POMOSHCHI IM. N. V. SKLIFOSOVSKOGO.

UNCLASSIFIED

BARKALOV, I. M.

IN THE COMMITTEE FOR INVENTIONS AND DISCOVERIES
UNDER THE COUNCIL OF MINISTERS USSR

[Announcements: Moscow, Vestnik Akademii Nauk SSSR, Russian, No
7, July 1973, pp 132-133]

The Committee has registered the following scientific
discoveries:

V. P. KAZNACHEYEV, S. P. SHUNIN and P. P. KHRAYLOVA. "The ef-
fect of intercellular distant electromagnetic interactions in
a system of two tissue cultures."

Formulation of the discovery: Experimentally established
was the previously unknown effect of distant intercellular elec-
tromagnetic interactions between two tissue cultures during the
action on one of them of factors of biological, chemical or phy-
sical nature with characteristic reaction of the other (intact)
culture in the form of a "mirror" cytopathic effect, which
determines the cell system as a detector of modulation peculiar-
ities of electromagnetic radiation.

Priority of invention: 15 February 1966
Certificate No 127. Application No OT-7097

By this discovery the paths of experimental evaluation of
the role of quantum effects in biological systems are designated.
It can help practice in finding means of effect on pathological
processes by the coordination of noises arising in a photon chan-
nel of information transmission.

S. M. BARKALOV. "The effect of change of structure and proper-
ties of alloys."

Formulation of the discovery: Experimentally established
was the previously unknown effect of change of the structure and

Properties of alloys based on iron, caused by the presence of trace impurities of compounds containing oxygen of the type of silicon monoxide.

Priority of invention: 7 June 1951

Certificate No 124. Application No OT-3717

Established the identity of processes taking place during the crystallization of solutions of mineral salts in the presence of a surface-active colloidal admixture, and secondary crystallization of iron-based alloys containing an admixture of silicon monoxide. The discovered effect permits creating a new theory connecting the properties of steel and iron-based alloys. Scientific principles of new technological processes have also been elaborated which assure, in combination with rational alloying, obtaining alloys with prescribed properties.

G. A. ANDRUOV, V. I. GOL'DANSKIY, T. N. IGNATOVICH, V. L. TAL'ROZ, P. A. YAMPOL'SKIY, I. N. BELYAYEV, A. N. DREMIN, and A. N. KREKOV. "The effect of formation of polymers in a shock wave."

Formulation of the discovery: Experimentally established as a result of previously unknown effect consisting in the fact that, in a condensed phase polymers are formed, the characteristics of which depend on the amplitude of the shock wave.

Priority of invention: 23 June 1964

Certificate No 125. Application No OT-3849

Investigation of this effect intensifies the understanding of processes taking place behind the front of a shock wave under the specific conditions of instantaneous unilateral immersion of a substance on the front. It substantially expands the area of application of shock waves and their technological use to obtain polymers whose characteristics can be varied by changing the conditions of effect of those waves.

YE. S. MASIKOVA, V. A. MOLCHANOV, D. D. ODITSOV, V. G. TEL'NOV-SKIY, AND V. M. CHICHEROV. "The effect of anisotropy of ion-electron emission of single crystals."

Formulation of the discovery: Established was the previously unknown effect of anisotropy of the ion-electron emission of single crystals, consisting in reduction of the number of emitted electrons when the incident ions are directed along the crystallographic axes of the target.

USSR

UDC 541.124-16+541.64

BOL'SHAKOV, A. I., MIKHAYLOV, A. I., BARKALOV, I. M., and GOL'DANSKIY, V. I.,
Institute for Physical Chemistry, Academy of Sciences SSSR, Moscow

"Low-Temperature Radiation Mechanism for the Polymerization of Acrylic Acid
in an Alcohol Case, Studied by ESR and Calorimetry"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 2, 1972, pp 379-382

Abstract: An attempt was made to optimize conditions to favor the lengthening of the main polymer chains and to suppress the formation of intermediate-size radicals. Since the heat content of the monomers is different from that of the polymers, changes in the heat content, as measured in a calorimeter, were used to follow the reaction products at different temperatures, radiation doses, and for two different states of the matrix. At about 100° K, the yield of the polymer was 80%. Increasing the temperature to 108° resulted in a large reduction of yield. At this point also, the ESR spectra indicated a significant increase in the mobility of the large radicals. Differences in the kinetics appear between reactions performed in the frozen (solid) alcohol matrix and those which took place in a supercooled (liquid) matrix.

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Radiation Chemistry

USSR

UDC 541(64+8):547.281.1

KIRYUKHIN, D. P., KAPLAN, A. M., BARKALOV, I. M., GOL'DANSKIY, V. I., Institute of Chemical Physics of the USSR Academy of Sciences

"Study of the Mechanism of Radiation Polymerization of Solid Formaldehyde"

Moscow, Vysokomlekulyarnyye soyedineniya -- Vol 14, No 10, 1972, pp 2115-2119

Abstract: A study was made of the radiation solid phase polymerization of formaldehyde using the calorimetric procedure which permits direct observations of the polymerization kinetics by the heat release (A. M. Kaplan, et al., Khimiya vysokikh energi, No 3, 460, 1969; D. P. Kiryukhin, et al., Vysokomolek, soyed., No B12, 491, 1970; I. M. Barkalov, Kinetics and Mechanism of Polymerizations, Vol VI, Budapest, 850, 1971) Chain polymerization takes place in solid formaldehyde at 15-140°K. The chain nature of the process proves the very high radiation yields ($G(-M) \approx 10^3$ at 15° K). The chain processes were observed at such low temperatures for the first time. The temperature dependence of the polymerization rate of the formaldehyde corresponds to the formal activation energy of 2 ± 0.6 kcal/mole for the 80-140° K interval. At lower temperatures the process takes place without activation. The process of decrease in the formaldehyde polymerization rate at constant temperature becomes noticeable even for low degrees of conversion ($\sim 0.2-0.5\%$). It is connected with a decrease in the growth constant on development of the $1/2$

USSR

KIRYUKHIN, D. P., et al., Vysokomokulyarnyye soyedineniya, Vol 14, No 10, 1972, pp 2115-2119

polymer chain in the solid crystal. Two different processes take place in solid formaldehyde: the rate of the first process depends sharply on the temperature and it is exhibited primarily at relatively high temperatures (80-140°K); the second process which is in practice thermally independent becomes predominant at low temperatures (80-15°K). This indicates that at low temperatures the chain propagation mechanism connected with tunnel proton transfer becomes predominant in solid formaldehyde.

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Acc. Nr

AP0045157

Abstracting Service:

CHEMICAL ABST.

5-70

Ref. Code

UR0456

B

91295a Radiation vulcanization of polyisobutylene in the presence of p-divinylbenzene. Kim I. P., Barkalov I. M., Egorov E. V. (Filial Inst. Khim. Fiz., Chernogolovka, USSR). *Khim. Vys. Energ.* 1970, 4(1), 81-2 (Russ). The irradiation of polyisobutylene (I)-p-divinylbenzene (II) blends with γ -rays caused grafting of I on II which results in the formation of a 3-dimensional lattice. There was an increase in the av. mol. wt. of the blend, as detd. by viscometry and decreased swelling in cyclohexane; changes in the ir spectrum showed that all II reacted. The process is equiv. to vulcanization of I. The max. content of gel fraction was attained with 75:25 I-II blend at 2-4 megarads irradiation dose. Larger doses began to degrade the rubber. CPJR -

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REEL/FRAME

19780057

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USSR

BARKALOV, N. B.

"Two Aggregated Models of Growth of Production Funds with Distributed Delay"

Modelir. Ekon. Protsessov [Modeling of Economic Processes -- Collection of Works], Moscow, Moscow University Press, 1972, pp 271-292 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V561, from the introduction).

Translation: Aggregated dynamic models such as the model of R. Solou are studied with a common form of continually distributed delay. Cases of materialized and nonmaterialized technical progress are studied individually.

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USSR

BARKALOV, N. B.

"One Version of Endogenic Progress"

Issled. po mat. Ekon. i Smezh. Vopr. [Studies in Mathematical Economics and Related Problems -- Collection of Works], Moscow University Press, 1971, pp 5-23, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V450 from the Resume).

Translation: A generalization is presented of the macroeconomic model of Solow under conditions of scientific and technical progress neutral in the sense of Harrod (RZhMat, 1968, 10V423). The total capital investments are divided into capital investments for expansion (and elimination of physical wear) and improvement -- investments in technical progress. The accumulated volume of the latter investment is taken as a measure of scientific and technical experience generating progress. Under these assumptions, a basic system of differential equations is produced and studied. Stable trajectories are analyzed, and one trajectory is selected providing the maximum consumption per unit of population. This trajectory is called the "golden rule trajectory." The values of control parameters on the "golden rule trajectory" are studied. Analogies are determined between this model and a model with exogenic progress, neutral in the sense of Harrod.

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BARKAN

M.S.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

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240070 HYDRAULIC CONTROL UNIT FOR THE CONTROL OF
PISTON-TYPE HYDRAULIC SERVO MECHANISMS

incorporating a reversing slide valve, friction coupling and a free running coupling, a disc with projections, a step-by-step motor and a control slide. For simplification the rod of the reversible slide valve is linked to the shaft of the free running coupling, which is linked in its turn via the friction coupling to the step-by-step motor. This has on its shaft a cam profile disc joined to a projection on the rod of the control slide.

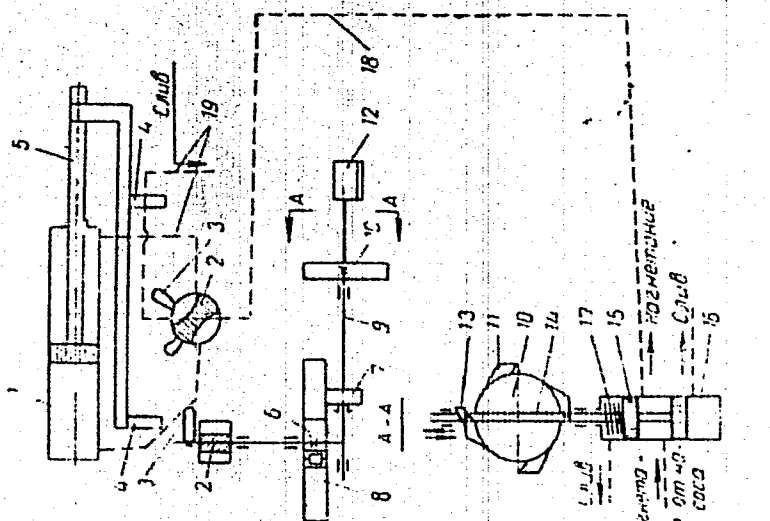
22.8.63 as 853743/18-24. M.S. BARKAN (19.8.69) Bul 12 /21.3.69. Class 21c, 46/50. Int.Cl.G 05f.

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Acc. Nr:

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Abstracting Service:

CHEMICAL ABST

Ref. Code:

4-70 UR9053

86916z Radioprotective effect of AET [2-aminoethylisothiuronium bromide] on the small intestinal epithelium of irradiated mice. II. Cell protector effect at different stages of the mitotic cycle. Barkan, R. S. (Lab. Radiat. Genet. Late Radiat. Consequences, Cent. Res. Inst. Roentgenol. Radiol., Leningrad, USSR). *Tsitologiya* 1970, 12(1), 127-9 (Russ). Autoradiography showed that AET administered i.p. at 150 mg/kg to mice 10, 14, or 18 hr before x-irradn. at 700 rads had a protective action and reduced the frequency of chromosomal rearrangements in the small intestinal epithelium. The greatest effect was on cells in the initial stage of DNA synthesis. BJJR

REEL/FRAME

19760483

Titanium

US...

UDC: 621.791:669.295

RUSSO, V.L. (Doctor of Techn. Sciences), KUDOVAROV, B.V. and ISKOV, B.B.
(Candidates of Techn. Sciences), NIKOLAYEV, A.A., POLYAKOV, V.M., PANKIN, Z.M.,
LYAMIN, A.M., and GRINFEL'D, R.A. (Engineers)

"Semi-Automatic Butt Welding of Heavy-Gage Titanium Alloys Without Grooving"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

Abstract: The most advanced welding techniques are those which provide high-capacity joints with geometric shapes offering maximum strength of the weld metal interlayer on contact with the much stronger base metal. This article discusses manual consumable-electrode welding technology for butt joints of titanium alloy plates, 20 to 100 mm thick. The test material was VT5 titanium alpha-alloy (base metal) with a tensile strength from 75 to 82 kg/mm². VT1 alloy was the filler wire (tensile strength 40-43 kg/mm²). A formula is given for calculating the value at which the weld joint tensile strength will be equal to that of the base metal. A curve is shown to demonstrate the effect of interlayer dimensions on the tensile strength of the weld. The mechanical properties of the interlayer are generally determined by two factors: the properties of the filler or electrode metal (weld metal) and the share of the base metal in the weld metal. Ultrasonic quality control of the test welds revealed faulty fusions in some weld areas. Use was made of a special jig

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USSR

RUSSO, V. L., et al, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

to maintain the angle of the electrode to the weld, prevent vibrations, and monitor a constant welding rate. The welding was done on a PGT-2 semi-automatic welder. The mechanical properties of both the weld metal and the joint on specimens (6 mm in diameter) include a tensile strength of 64.6 kg/mm², a yield point of 56.5 kg/mm², an elongation of 14 percent, an area reduction of 39.2 percent, a notch toughness (round notch) of 9.8 kg/mm², and a bending angle of 120° (on specimens with longitudinal welds). The value at which the weld joint is equal in tensile strength to that of the base metal was established at 0.1 to 0.35 and the ratio is $\frac{\sigma}{\sigma} \frac{m.}{t.s.} / \frac{w.m.}{t.s.}$.

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USSR

UDC: 539.374

BARKAYA, V. F.

"Investigation of Fields of Deformations During Lathe Spinning of Conical Shells, Using the Method of Microstructural Analysis"

Tr. Gruz. Politekhn. in-t (Works of the Georgian Polytechnical Institute), 1970, No 4, pp 164-177 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V408)

Translation: The author considers the process of lathe spinning of conical shells from circular sheet workpieces. Workpieces 200 mm in diameter made from Armco iron were extruded in the experiments. The method of microstructural analysis is used to study the deformed state of the workpiece which arises with various forms of lathe spinning. The method of experimental study is described, and the cutoff points of the specimens for making test sections are indicated. The initial microstructure of the specimens is shown, as well as the microstructure of the workpiece after plastic deformation. Data are given on the magnitudes of deformations in various cross sections with various types of lathe spinning. The nature of the change in deformations is shown along the generatrix of a conical specimen made by the method of lathe spinning. Ye. M. Tret'yakov.

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USSR

UDC 543.544

BARKETOV, E. S., KOPYLOVA, V. D., KARGMAN, V. B., DRUSIN, M. I.
and SALDADZE, K. M., Scientific-Research Institute of Plastics,
Moscow, State Committee

"A Study of Anion-Exchange Resins with Complexing Properties"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XXV, No 3, Mar 70,
pp 440-444

Abstract: In connection with obtaining new ion-exchange materials, researchers have devoted much attention to the synthesis of selective ionites which will absorb ions of one or several elements on a selective basis. These efforts have usually been complicated with various difficulties, including the necessity for multistage synthesis.

To overcome these difficulties, the authors studied the complexing properties of new anion-exchange resins based on copolymers of N-(β -(5-vinylpyridyl-2)ethyl)amines and N, N'-di(β -(5-vinylpyridyl-2)-ethyl-substituted diamines, in connection with bivalent copper, cobalt and nickel cations.

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BARKETOV, E. S., et al., Zhurnal Analiticheskoy Khimii, Vol XXV,
No 3, Mar 70, pp 440-444

It was found that the anion-exchange resins which contained ethylene-diamine groups had the strongest complexing capability. These have a comparatively high capacity for cations, which they sorb from very dilute solutions (less than $10^{-3}N$). In addition, macroporous resins of this type showed more intense sorption kinetics than those of gel structure.